

**INFORMATION DISCLOSURE CITATION**  
(USE SEVERAL SHEETS IF NECESSARY)

Docket Number (Optional)

**99-100**

Application Number

**09/301,004**

Applicant(s)

**ODED EDDIE STURMAN**

Filing Date

**April 27, 1999**

Group Art Unit

**unassigned**

**U. S. PATENT DOCUMENT**

Examiner Initial	Ref	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
HHH	U.S.	3,209,737	10/05/1965	Omotehara et al.	123	90	06/21/1963
	U.S.	3,532,121	10/06/1970	Sturman et al.	137	625.4	01/15/1969
	U.S.	3,683,239	08/08/1972	Sturman	317	150	06/17/1971
	U. S.	3,743,898	07/03/1973	Sturman	317	154	03/27/1972
	U. S.	4,396,037	08/02/1983	Wilcox	137	625.65	05/13/1981
	U. S.	4,409,638	10/11/1983	Sturman et al.	361	152	10/14/1981
	U. S.	4,887,562	12/19/1989	Wakeman	123	90.12	09/28/1988
	U. S.	4,930,464	06/05/1990	Letsche	123	90.12	09/27/1989
	U. S.	5,003,937	04/02/1991	Matsumoto et al.	123	90.12	08/01/1989
	U. S.	5,022,358	06/11/1991	Richeson	123	90.12	07/24/1990
HHH	U. S.	5,124,598	06/23/1992	Kawamura	310	30	04/30/1990

**FOREIGN PATENT DOCUMENTS**

Ref	Document Number	Date	Name	Class	subclass	Filing date If appropriate

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

HHH	"Breakthrough In Digital Valves" by Sturman et al. (Sturman Industries, Inc.) reprinted from <u>Machine Design</u> pp. 37-40, 42, February 21, 1994
	SAE Paper No. 960581 "Camless Engine" by Schechter et al. (Ford Research Lab) February 26, 1996
	"Developments In Digital Valve Technology" by Rob Wilson reprint from <u>Diesel Progress North American Edition</u> pp. 76, 78-79 April 1997
HHH	SAE Paper No. 970248 "Dynamic Model of a Springless Electrohydraulic Valvetrain" by Kim et al. (U. of Illinois and Ford Research Company) 1997

**EXAMINER**

HA1 HUYNH

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HHH	U.S.	5,170,755	12/15/1992	Kano et al.	123	90.17	03/06/1992
	U.S.	5,193,495	03/16/1993	Wood, III	123	90.12	07/16/1991
	U.S.	5,209,453	05/11/1993	Aota et al.	251	57	11/19/1990
	U. S.	5,224,683	07/06/1993	Richeson	251	30.01	03/10/1992
	U. S.	5,237,976	08/24/1993	Lawrence et al.	123	508	12/17/1992
	U. S.	5,248,123	09/28/1993	Richeson et al.	251	29	12/11/1991
	U. S.	5,255,641	10/26/1993	Schechter	123	90.11	12/21/1992
	U. S.	5,275,136	01/04/1994	Schechter et al.	123	90.12	05/07/1993
	U. S.	5,327,856	07/12/1994	Schroeder et al.	123	90.12	12/22/1992
	U. S.	5,335,633	08/09/1994	Thien	123	90.12	06/10/1993
HHH	U. S.	5,339,777	08/23/1994	Cannon	123	90.12	08/16/1993

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**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

HHH	SAE paper no. 981029 "Adaptive Lift Control for a Camless Electrohydraulic Valvetrain" by Anderson et al. (U. of Illinois and Ford Motor Co.) February 23, 1998.
	SAE Paper No. 1999-01-0196 "Application of Digital Valve Technology to Diesel Fuel Injection" by Cole et al. (Sturman Industries, Inc.) March 1, 1999.
	SAE Paper No. 1999-01-0825 "Digital Valve Technology Applied to the Control of an Hydraulic Valve Actuator" by Misovec et al. (Sturman Industries, Inc.) March 1, 1999.
HHH	"A New Generation of Two-Stroke Engines for the Year 2000" by Duret, <u>A New Generation of Two-Stroke Engines for the Future?</u> Paris, 1993, pp. 181-194

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###	U. S.	5,367,990	11/29/1994	Schechter	123	90.12	12/27/1993
	U.S.	5,373,817	12/20/1994	Schechter et al.	123	90.12	12/17/1993
	U.S.	5,410,994	05/02/1995	Schechter	123	90.12	06/27/1994
	U.S.	5,448,973	09/12/1995	Meyer	123	90.12	11/15/1994
	U. S.	5,460,329	10/24/1995	Sturman	239	96	06/06/1994
	U. S.	5,471,959	12/05/1995	Sturman	123	447	08/31/1994
	U. S.	5,494,219	02/27/1996	Maley et al.	239	88	06/02/1994
	U. S.	5,507,316	04/16/1996	Meyer	137	625.65	09/15/1994
	U. S.	5,572,961	11/12/1996	Schechter et al.	123	90.12	04/05/1995
	U. S.	5,577,468	11/26/1996	Weber	123	90.12	11/29/1991
###	U. S.	5,598,871	02/04/1997	Sturman et al.	137	625.65	09/13/1994

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Ref	Document Number	Date	Name	Class	subclass	Filing date If appropriate

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

###	"Development of a New Two-Stroke Engine with Poppet-Valves: Toyota S-2 Engine" by Duret, <u>A New Generation of Two-Stroke Engines for the Future?</u> Paris, 1993, pp. 53-62.
	"Twenty Years of Piaggio Direct Injection Research to Mass Produced Solution for Small 2T SI Engines" by Nuti et al., <u>Two-Stroke Engines and Emissions</u> , SAE Publication SP-1327, 1998, pp. 65-78.
	<u>Design and Simulation of Two-Stroke Engines</u> by Blair, SAE Publications No. R-161, pp. 1-48.
###	<u>Diesel Engine Reference Book Second Edition</u> by Challen, SAE Publication No. R-183, pp. 27-71.

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Examiner Initial	Ref	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
HHH	U. S.	5,622,152	04/22/1997	Ishida	123	446	07/05/1995
	U.S.	5,628,293	05/13/1997	Gibson et al.	123	446	08/31/1995
	U.S.	5,638,781	06/17/1997	Sturman	123	90.12	05/17/1995
	U.S.	5,640,987	06/24/1997	Sturman	137	1	04/05/1994
	U. S.	5,673,669	10/07/1997	Maley et al.	123	446	06/12/1995
	U. S.	5,700,136	12/23/1997	Sturman	417	270	07/23/1996
	U. S.	5,713,316	02/03/1998	Sturman	123	90.12	02/27/1997
	U. S.	5,720,261	02/24/1998	Sturman et al.	123	446	12/01/1994
	U. S.	5,813,841	09/29/1998	Sturman	417	446	05/16/1996
HHH	U. S.	5,829,396	11/03/1998	Sturman	123	90.12	07/16/1996

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**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

HHH	"Characteristics of Scavenging Flow in A Poppet-Valve Type 2-Stroke Diesel Engine by Using RSSV System", <u>Progress in Two-Stroke Engine and Emissions Control</u> , SAE Publication SP-1131, 1998, pp. 93-101.
	"NOx Control in Heavy-Duty Diesel Engines - What is the Limit?" <u>In-Cylinder Particulate and NOx Control</u> , SAE Publication No. SP-1326, 1998, pp. 9-20.
	"Stratified Diesel Fuel-Water-Diesel Fuel Injection Combined with EGR-The Most Efficient In-Cylinder NOx and PM Reduction Technology", <u>Combustion and Emissions in Diesel Engines</u> , SAE Publication No. SP-1299, 1997, pp. 39-44.
HHH	<u>Vehicle and Engine Technology Second Edition</u> by Heisler, SAE International, London, 1999, pp. 292-308.

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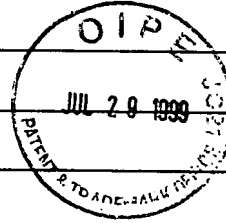
**April 27, 1999**

Group Art Unit

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**FOREIGN PATENT DOCUMENTS**

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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

<b>HHH</b>	U. S. Appln. No. 08/712,208 filed 07/21/1998 HYDRAULICALLY CONTROLLED CAMLESS VALVE SYSTEM FOR AN INTERNAL COMBUSTION ENGINE (Sturman)
<b>I</b>	U. S. Appln. No. 08/799,296 filed 02/13/1997 A CONTROL MODULE FOR CONTROLLING HYDRAULICALLY ACTUATED INTAKE/EXHAUST VALVES AND A FUEL INJECTOR (Sturman)
<b>I</b>	U. S. Appln. No. 08/899,801 filed 07/24/1997 HYDRAULIC ACTUATOR FOR AN INTERNAL COMBUSTION ENGINE (Sturman)
<b>HHH</b>	U. S. Appln. No. 09/026,627 filed 02/20/1998 PULSED-ENERGY CONTROLLERS AND METHODS OF OPERATION THEREOF (North)

EXAMINER

**HAI HUYNH**

DATE CONSIDERED

**11/12/00**

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# INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

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Applicant(s)

Oded Eddie Sturman et al.

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April 27, 1999

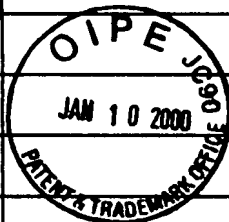
Group Art Unit

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## U.S. PATENT DOCUMENTS

#8

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
H H H	U. S.	5,954,030	09/21/1999	Sturman et al.	123	446	11/30/1995
I	U. S.	5,960,753	10/05/1999	Sturman	123	90.12	07/24/1997
H H H	U. S.	5,970,956	10/26/1999	Sturman	123	508	02/13/1997



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## FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							YES	NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)


EXAMINER

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DOCKET NUMBER (OPTIONAL)

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APPLICATION NUMBER

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APPLICANT(S)

Oded Eddie Sturman et al.

FILING DATE

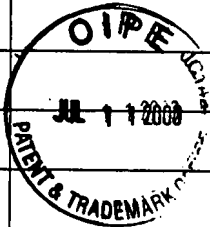
April 27, 1999

GROUP ART UNIT

3747

**U. S. PATENT DOCUMENTS**

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
HHH	U. S.	6,005,763	12/21/1999	North	361	154	02/20/1998
HHH	U. S.	6,012,644	01/11/2000	Sturman et al.	239	96	04/15/1997



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**FOREIGN PATENT DOCUMENTS**

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						YES	NO

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